



UNITED STATES DEPARTMENT OF COMMERCE  
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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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07/653,017 02/08/91 LIDOW

A IR-1013 (CONT

EXAMINER

LOKE, S

ART UNIT

PAPER NUMBER

258

5

DATE MAILED:

05/24/91

OSTROLENK, FABER,  
GERB & SOFFEN  
1180 AVENUE OF THE AMERICAS  
NEW YORK, NY 10036-8403

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice re Patent Drawing, PTO-948.       |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.      | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____   |

Part II SUMMARY OF ACTION

1. ☒ Claims 12-19 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 12-19 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are, ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no: \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other \_\_\_\_\_

EXAMINER'S ACTION

Art Unit 258

Claims 12-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 5,008,725 in view of Hanes et al.

The obviousness-type double patenting rejection is a judicially established doctrine based upon public policy and is primarily intended to prevent prolongation of the patent term by prohibiting claims in a second patent not patentably distinct from claims in a first patent. *In re Vogel*, 164 USPQ 619 (CCPA 1970). A timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(b) would overcome an actual or provisional rejection on this ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 C.F.R. § 1.78(d).

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 12-19 are rejected under 35 U.S.C. § 103 as being unpatentable over Lidow et al (5,008,725) in view of Hanes et al.

Lidow et al claim a high power MOSFET in fig.5. It comprises:

- (a) a n type layer [21] formed on a wafer;
- (b) a plurality of hexagonal base regions [22,23] formed in the n type layer [21];
- (c) each of base regions [22,23] is surrounded by a symmetric hexagonal lattice;
- (d) each side of the base regions [22,23] parallel to an adjacent side of another base regions;
- (e) source regions [26,27] formed in the base regions [22,23] and channel regions [60,61,62,63] formed between the source and base regions;
- (f) a source electrode [50] connected to the source and base regions [26,27,22,23] and a drain electrode [51] connected to a wafer;
- (g) insulated gate electrodes [40,41,42] formed on the channel regions [60,61,62,63].

Hanes et al discloses a power MOSFET in fig.8 and 16. It comprises:

- (a) a n type base region [22] formed on a n type wafer [24];
- (b) a plurality of n type source regions [73] formed on a plurality of p type base regions [71] which formed on the n type base region [22];
- (c) insulated gate electrode [92] formed on the channel regions between the source and base regions [73,22];
- (d) source and drain electrodes [92,28] formed on the source and

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drain regions [73,24] respectively;

(e) a gate pad electrode [50] formed on the device and gate fingers [51, -51<sub>n+1</sub>, 61, -61<sub>n+1</sub>] extending from the gate electrode [50].

Since both Lidow et al and Hanes et al teach an insulated gate high power MOSFET, it would have been obvious to one of ordinary skills in the art to have the gate electrode and fingers of Hanes et al in Lidow et al because it is <sup>a</sup>common insulated gate structure and it reduces the R-C delay constant of the device.

Any inquiry concerning this communication should be directed to Loke at telephone number (703) 308-3700.

Loke/dm  
May 21, 1991

*L. L.*

*Rolf Hille*  
**ROLF HILLE**  
**SUPERVISORY PATENT EXAMINER**  
**ART UNIT 258**

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653017

## NOTICE OF DRAFTSMAN'S PATENT DRAWING REVIEW

THE PTO DRAFTSMEN REVIEW ALL ORIGINALLY FILED DRAWINGS REGARDLESS  
OF WHETHER THEY WERE DESIGNATED AS INFORMAL OR FORMAL.

The drawings filed

2/8/91

A. ☐ are approved.B. ☒ are objected to under 37 CFR 1.84 for the reason(s) checked below. The examiner will require submission of new, corrected drawings at the appropriate time. Corrected drawings must be submitted according to the instructions listed on the back of this Notice.

1. Paper and ink. 37 CFR 1.84(a)

☒ Sheet(s) All (copy machine marks) Poor.

2. Size of Sheet and Margins. 37 CFR 1.84(b)

## Acceptable Paper Sizes and Margins

Margin	Paper Size		
	8 1/2 by 14 inches	8 1/2 by 13 inches	DIN size A4 21 by 29.7 cm.
Top	2 inches	1 inch	2.5 cm.
Left	1/4 inch	1/4 inch	2.5 cm.
Right	1/4 inch	1/4 inch	1.5 cm.
Bottom	1/4 inch	1/4 inch	1.0 cm.

☐ Proper Size Paper Required.  
All Sheets Must be Same Size.  
Sheet(s) \_\_\_\_\_☒ Proper Margins Required.  
Sheet(s) Fig. 1, 4☒ TOP☐ RIGHT☒ LEFT☐ BOTTOM

3. Character of Lines. 37 CFR 1.84(c)

☒ Lines Pale or Rough and Blurred.  
Fig(s) 1-5.☐ Solid Black Shading Not Allowed.  
Fig(s) \_\_\_\_\_

4. Hatching and Shading. 37 CFR 1.84(d)

☐ Shade Lines are Required.  
Fig(s) \_\_\_\_\_☐ Criss-Cross Hatching Not Allowed.  
Fig(s) \_\_\_\_\_☐ Double Line Hatching Not Allowed.  
Fig(s) \_\_\_\_\_☐ Parts in Section Must be Hatched.  
Fig(s) \_\_\_\_\_

5. Reference Characters. 37 CFR 1.84(f)

☒ Reference Characters Poor or Incorrectly Sized.  
Fig(s) 1-5.☐ Reference Characters Placed Incorrectly.  
Fig(s) \_\_\_\_\_

6. Views. 37 CFR 1.84(i) &amp; (j)

☐ Figures Must be Numbered Properly.  
\_\_\_\_\_☐ Figures Must Not be Connected.  
Fig(s) \_\_\_\_\_7. ☐ Photographs Not Approved.  
\_\_\_\_\_8. ☐ Other.  
\_\_\_\_\_

Telephone inquiries concerning this review should be directed to the Chief Draftsman at telephone number (703) 557-6404.

\_\_\_\_\_  
Reviewing Draftsman\_\_\_\_\_  
Date

2/25/91